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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/739,989	12/18/2000	Jaan Noolandi	D/A0489Q	4290

7590 04/29/2005

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EXAMINER

DAWSON, GLENN K

ART UNIT	PAPER NUMBER
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3731

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/739,989

Applicant(s)

NOOLANDI ET AL.

Examiner

Glenn K Dawson

Art Unit

3731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 02-17-2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 3731

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02-14-2005 has been entered.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3731

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3,5,7-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser-5485828 in view of Zesch, et al.-6200491

Hauser discloses the invention as claimed (as previously submitted in the last office action) with the exception of the plurality of lenses driven by a single transducer and a plurality of transducers. Zesch discloses the use of a single transducer driving an array of acoustic lenses for an ink printer. It would have been obvious to have provided the device of Hauser with a plurality of transducers, each driving an array of lenses, as merely being an obvious duplication of known parts, and because using a single

Art Unit: 3731

transducer to drive more than one lens greatly simplifies, and lessens the cost of the manufacturing of the device. Providing more than one lens allows for more concentrated delivery of the medication in the prescribed particle size range.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser-5485828 in view of Zesch, et al.-6200491, as applied to the claims above, and further in view of Ryder-5415161.

Hauser as modified by Zesch makes obvious the invention as claimed with the exception of the duration of the energy pulse. Ryder discloses that it was known to gate an inhalation therapy device to deliver medication only during an inhalation. It would have been obvious to have provided the pulse to the transducer for less than 5 seconds, as it has been shown by Ryder that it was known to provide medication only during inspiration. As inspiration would be less than 5 seconds, to have provided a pulse of less than 5 seconds (less than the duration of an inspiration) would have been obvious to reduce the waste of medication.

Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser-5485828 in view of Zesch, et al.-6200491, as applied to the claims above, and further in view of Sweet-5231426.

Hauser as modified by Zesch makes obvious the invention as claimed with the exception of the Fresnel lenses, the placement from the orifice and the frequency of the pulse. Sweet discloses the use of fresnel acoustic lenses, and that it was known to use a pulse of 300MHz to achieve a droplet size of 5 microns.

Art Unit: 3731

It would have been obvious to have placed the device in the mouth of the user during droplet formation to prevent medication loss. To have used a pulse greater than 300 MHz would have been obvious had one desired the droplet sizes to be slightly below 5 microns. To have used fresnel lenses would have been a notoriously well-known type of lens to use for acoustic lenses as they constitute an effective lens for focusing energy.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable Hauser-5485828 in view of Zesch, et al.-6200491, as applied to the claims above, and further in view of Lloyd-5497763.

Hauser as modified by Zesch makes obvious the invention as claimed with the exception of the ejection of the droplets upon a critical air speed being achieved. Lloyd discloses the use of an airflow sensor to synchronize the administration of inhaled medication with inhalation. It would have been obvious to have provided the device of Hauser with an airflow sensor in order to deliver the medication only during inhalation to prevent waste of medication.

***Allowable Subject Matter***

Claims 15,17 and 18 are allowed.

Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments filed 02-14-2005 have been fully considered but they are not persuasive.

The use of "mist" of ink by the examiner was meant to denote merely a plurality of droplets or particles. Clearly it was known to provide single transducers driving a lens array in ink printers as evidenced by Zesch.

Multiplexers were known as evidenced by Sweet for driving transducers in a manner to produce a predetermined pattern of droplet formations.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn K Dawson whose telephone number is 703-308-4304. The examiner can normally be reached on M-Th 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan T. Nguyen can be reached on 703-308-2154. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn K Dawson  
Primary Examiner  
Art Unit 3731

Gkd  
26 April 2005